SM07883, a novel, oral DYRK1A kinase inhibitor, reduced tau pathology and associated behavioral deficits in preclinical models

Specifically inhibited DYRK1A and reduced pTau in vitro

Inhibited tau pathology in JNPL3 mouse brains

Inhibited tau pathology in 3xTg-AD mouse brains

SM07883 reduced neurodegeneration-induced neuroinflammation in transgenic mouse models

**Astrocyte Staining (JNPL3 Spinal Cord)**

- GFAP (pg/ml-Ratio over WT)
- **Wild-type + Vehicle**
- **Vehicle**
- **3 mg/kg SM07883**

**Activated Microglial Cells (JNPL3 Brainstem)**

- Iba1-positive Cells (Cell count per ROI)
- **Wild-type + Vehicle**
- **Vehicle**
- **3 mg/kg SM07883**

**Astrocyte Staining (3xTg-AD Hippocampus)**

- GFAP (% total area)
- **Wild-type + Vehicle**
- **11-mo 3xTg-AD**
- **Vehicle**
- **5 mg/kg SM07883**

**Activated Microglial Cells (3xTg-AD Hippocampus)**

- Iba1-positive Microglia (Intensity - % total area)
- **Wild-type + Vehicle**
- **11-mo 3xTg-AD**
- **Vehicle**
- **5 mg/kg SM07883**

*Mean ± SEM; ***P<0.001 vs. vehicle*
SM07883 significantly reduced functional and cognitive deficits in transgenic mouse models